NGDA Dataset Report

Official NGDA Title: MultiBeam Bathymetric Data Base (MBBDB)

Metadata Record Title: MultiBeam Bathymetric Data Base (MBBDB)

A–16 NGDA Theme: Elevation

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Metadata:

Registration Status: Complete

Registered on 3/20/2015

GeoPlatform Link*: https://www.geoplatform.gov/node/243/1b7154df-bd88-4cc0-963a-d57a10306d57

Data.gov Metadata Link*: http://catalog.data.gov/harvest/object/8b85c292-521d-4992-8f53-cc39dafeb1ae/html

*If the metadata has been updated and reharvested after publication of this report, the link may no longer be valid. The dataset may be searched for manually in Data.gov or GeoPlatform.gov.

NGDA Lifecycle Maturity Assessment (LMA) Report

Time Frame:

Baseline assessment responses include all datasets (cruises) at NCEI to date (Sep 2015). Datasets cover temporal extents of commercial multibeam sonar availability, circa 1980 to

LMA Submission:

Status: Complete

Date: 10/6/2015

Extension Requested: No

LMA Reviewer(s):

Supervisor: Did not review

Theme Lead: Did not review

Executive Champion: Did not review

SAOGI*:   Did not review

Other: NOAA LMA coordinator

LMA Verifier:

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Attachments:

To get access to any attachments referenced in the report, email the LMA Help Desk at NGDA_LMA_help@fgdc.gov. Please use the subject "Dataset Report Attachment(s)" and indicate the associated official NGDA title.

*Senior Agency Official for Geospatial Information (SAOGI)

Lifecycle Maturity Assessment (LMA) Summary

Overall Maturity:

Optimized; Established

General Questions: 91%

Optimized; Established

Stage 1 - Define/Plan: 100%

Optimized; Established

Stage 2 - Inventory/Evaluate: 100%

Optimized; Established

Stage 3 - Obtain: 88%

Mature; Consistent

Stage 4 - Access: 100%

Optimized; Established

Stage 5 - Maintain: 82%

Mature; Consistent

Stage 6 - Use/Evaluate: 100%

Optimized; Established

Stage 7 - Archive: 100%

Optimized; Established

NGDA Dataset Maturity Definitions:

How To Calculate Maturity: https://www.geoplatform.gov/sites/default/files/How_to_Calculate_Maturity.pdf

Maturity	Maturity Characteristics for All Lifecycle Stages
Optimized; Established Rank = 5	Dataset meets virtually all business needs of all users. The dataset is considered authoritative by owners and secondary users. It is curated across all stages of the approved lifecycle. Future needs are defined on a regular basis and resources for addressing both current and future business requirements are available.
Mature; Consistent Rank = 4	Dataset meets all the business needs of the primary owner and most of the secondary users. The dataset is curated and used as authoritative by the primary owner. Dataset is used widely by secondary users actively engaged in sustaining the dataset. Future needs are identified and steps are planned to address these. All stages are supported and reviewed on a recurring basis. The dataset is well managed in relation to the approved lifecycle.
Managed; Predictable Rank = 3	Dataset meets a significant number of the business needs of the primary owner and is widely used as an authoritative resource by secondary users. Benchmark activities are occurring in at least four of the approved lifecycle stages. Management practices in relation to the approved lifecycle is moderate but consistent. Dataset is integrating changing business requirements in lifecycle stages impacting overall maturity.
Transition; Transformation Rank = 2	Dataset meets business needs of the primary owner and has moderate use by secondary users. Benchmark activities are occurring in at least three stages. Efforts to integrate funding, include partners, and obtain data are not supported in a sustained manner. Management practices in relation to the stages of the approved lifecycle is limited.
Planned; Initial Development Rank = 1	Dataset limited in meeting business needs of the primary owner. Benchmark activities in the approved lifecycle are just starting to consider secondary uses, partnerships are forming to support additional dataset uses. Dataset development is in a very early stage. Minimal or limited management against the benchmarks in the approved lifecycle.
No Activity Rank = no activity	Dataset meets project or local business needs of the primary owner, secondary or additional uses or users were not considered, not recognized as an authoritative data or is part of a similar dataset. Not managed to any of the benchmarks in the approved lifecycle.

General Questions for All Stages

1) Is there a recurring process to obtain funding for all lifecycle stages of this dataset?

Answer: Funding support exists but is not adequate to meet known requirements, most lifecycle stages are supported.

Justification Comment: **Attachment(s):**   0

This dataset is supported on base funds. The data center (archive) has funds for receiving, inventorying, redistributing, and archiving the data at a minimal level. There is not typically funding for improving these aspects of the data lifecycle. Additional funding could improve data coverage, data acquisition and quality review.

2) Is there a process in place to ensure that open government and transparency guidelines are followed in all lifecycle stages for this dataset?

Answer: Process is published as appropriate with respect to sensitivity requirements, process is transparent, published appropriately.

Justification Comment: **Attachment(s):**   0

Management of this dataset follows all scientific data management per the NOAA Administrative Order "NAO 202-735D: Scientific Integrity." NAO 202-735D outlines how NOAA complies with Open Government and Transparency requirements for all scientific data.
http://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_202/202-735-D.html

3) Are there processes and tools in place so that staff are sufficiently knowledgeable to ensure a continuity of the dataset for all stages of the lifecycle, especially during staffing transitions?

Answer: Processes and tools to ensure dataset continuity are in place and implemented for all lifecycle stages.

Justification Comment: **Attachment(s):**   0

There are numerous internal guidance documents detailing procedures for documenting and stewarding the data long term. There is overlap and personnel redundancy for many stages of the lifecycle so there is not a single point of failure and continuity will be maintained in most occasions.

STAGE 1 - Define/Plan

4) Are user and business requirements defined and formalized?

Answer: A recurring process is in place, including defining new partner and stakeholder business needs as they arise, and is fully implemented.

Justification Comment: **Attachment(s):**   0

Submission agreements are reviewed and updated regularly, stakeholders determine any sensitivity.

5) How are partners/stakeholders involved in the requirements collection process?

Answer: A recurring process is in place, including defining new partner and stakeholder business needs as they arise, and is fully implemented.

Justification Comment: **Attachment(s):**   0

Submission agreements are reviewed and updated regularly, stakeholders influence definition of data format standards and quality.

6) Is there a quality assurance process for the dataset?

Answer: Quality assurance published as appropriate with respect sensitivity requirements.

Justification Comment: **Attachment(s):**   0

The user community and data acquisition firms define the quality and usability of the data. Metadata is provided to highlight QA processes and suspect data as necessary.

MBBDB metadata record:
http://www.ngdc.noaa.gov/docucomp/page?xml=NOAA/NESDIS/NGDC/Collection/iso/xml/G01034.xml&view=getDataView&header=none
Individual dataset metadata:
http://www.ngdc.noaa.gov/metadata/published/NOAA/NESDIS/NGDC/MGG/Multibeam/iso/

7) Is there a process to evaluate the sensitivity, privacy, and confidentiality of this dataset?

Answer: Sensitivity, privacy, and confidentiality evaluations fully implemented, reviewed and updated on a recurring basis.

Justification Comment: **Attachment(s):**   0

Sensitivity and proprietary holds are determined on a case-by-case basis since all data within the archive are deemed publicly available. To handle the rare sensitive dataset, the archive is equipped with nonpublic directories and the database contains a publish flag and private comments field where dataset sensitivity requirements are defined.

8) Are defined data standards used in collecting, processing, and/or rendering the data?

Answer: Standards fully implemented documented and published as appropriate.

Justification Comment: **Attachment(s):**   0

The majority of the multibeam data in the MBBDB are stored in the native manufacturer format of the sonar instrument used. These formats are documented by the manufacturers and are updated as new technologies and advancements arise. Conversions to other formats are documented in the metadata for each dataset.

STAGE 2 - Inventory/Evaluate

9) Is there a process for determining if data necessary to meet requirements already exist from other sources (either within or outside the agency) before collecting or acquiring new data?

Answer: Process for determining appropriate data is being reused fully implemented, reviewed, and updated on a regular basis.

Justification Comment: **Attachment(s):**   0

These data were collected by third parties (government, academic, and foreign sources) and delivered to NCEI for archiving. The organizations collecting the data are responsible for determining whether pre-existing data are obtainable through NCEI or other sources. Once the data are at NCEI, the data center makes all data freely available to the public and promotes its reuse.

STAGE 3 - Obtain

10) Is there a process for obtaining data in relation to this dataset?

Answer: Process is fully implemented, reviewed and updated on a regular basis.

Justification Comment: **Attachment(s):**   0

Data are acquired by external organizations. The archive has engaged organizations that regularly contribute in submission agreements which define the long term stewardship of the data at the archive. These agreements also define the frequency, volume, and transfer method of data submissions.

11) Is the metadata in a FGDC endorsed geospatial metadata standard?

Answer: Metadata is available in a format endorsed by the FGDC, it fully describes the dataset and provides all the information required to make the dataset discoverable, accessible, and usable.

Justification Comment: **Attachment(s):**   0

A collection level metadata record in the ISO 19115-2 standard is registered with Data.gov and is compliant with current NGDA Metadata Guidelines. Additionally, ISO 19115-2 metadata records are created at the cruise level for all datasets in the MBBDB. Metadata generated by the data providers

that is included in the dataset do not always conform to a standard.

12) How complete is the geographic coverage as defined in the requirements for the dataset?

Part 1 Answer: Business requirement targets are on track, milestones are being met.

Part 2 Answer: Dataset has presently attained the greatest geographic coverage as defined by the current requirements or roughly 100%.

Justification Comment: **Attachment(s):**   0

There are no business requirements controlling the Multibeam Bathymetry Database (MBBDB). The database is comprised of thousands of datasets (cruises) that are collected based on the chief scientist's specific project needs. Therefore, there are no coverage requirements or expected amounts of acquisition for any time period.

From the National Centers for Environmental Information (NCEI - the archive) perspective, the requirement could be to add to the collection whenever new data are available. This would justify the coverage selection since NCEI ingests and archives all data it receives. Overall though, this question is not really applicable to the MBBDB.

STAGE 4 - Access

13) Do you have a process for providing users access to the data in an open digital machine readable format?

Answer: User access process is fully implemented, data is available, process is reviewed and updated on a recurring basis.

Justification Comment: **Attachment(s):**   0

Numerous web-based discovery and access tools are maintained at the data center. The data manager is also available to assist users with acquiring, converting, or trouble shooting data.

The collection level metadata record provides links for searching and downloading multibeam data: http://www.ngdc.noaa.gov/docucomp/page?xml=NOAA/NESDIS/NGDC/Collection/iso/xml/G01034.xml &view=getDataView&header=none

Bathymetric Map Viewer:
http://maps.ngdc.noaa.gov/viewers/bathymetry/

Multibeam survey text search:
http://wwwtest.ngdc.noaa.gov/nndc/struts/form?&t=101378&s=47&d=21,22

The AutoGrid web application allows users to create custom grids and map images of multibeam bathymetry data:
http://maps.ngdc.noaa.gov/viewers/autogrid/

STAGE 5 - Maintain

14) Is there a maintenance process for updating and storing the dataset?

Answer: Dataset maintenance process is fully implemented and processes are reviewed and periodically updated.

Justification Comment: **Attachment(s):**   0

The data manager is constantly evaluating the dataset - both incoming data and archived data. Archive files are periodically assessed to assure they maintain usability and Submission Agreements with data providers are revisited and updated as necessary.

NCEI follows National Archives and Records Administration (NARA) standards and maintains computer and tape storage rooms to the climate-controlled specifications. Second copies of archived data go to an offsite climate-controlled facility maintained by the Data Center, and all data on spinning disk is regularly backed up. Media refresh of archived data occurs within the industry standard guidelines between 5 - 10 years, and has occurred more frequently before 5 years. https://www.archives.gov/records-mgmt/storage-standards-toolkit/

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15) Is there an error correction process as part of dataset maintenance?

Answer: Error correction process established.

Justification Comment: **Attachment(s):**   0

Errors are assessed on a case-by-case basis and involve any necessary personnel to remedy the issue. The dataset in question will be corrected, however, the users are not notified of errors.

STAGE 6 - Use/Evaluate

16) Is there a process to determine if the dataset meets user needs?

Answer: Process is fully implemented and repeated on a recurring basis.

Justification Comment: **Attachment(s):**   0

User needs are driven by the users. These are established over time and the dataset will evolve to meet the needs. There is no procedure where the data manager explicitly solicits user needs. However, the data manager maintains a presence within the user community by participating in meetings and conferences, joining listservs and user groups, and interfacing with data providers. The data manager can gauge user needs through this involvement.

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17) Is there a process to provide users information on how to access and properly use the dataset?

Answer: Process is fully implemented supporting access and proper use, process is reviewed on a recurring basis.

Justification Comment: **Attachment(s):**   0

There are instructions and help documentation regarding how to acquire the data included on the multibeam web page (http://www.ngdc.noaa.gov/mgg/bathymetry/multibeam.html) and the bathymetric map viewer (http://maps.ngdc.noaa.gov/viewers/bathymetry) on the NCEI website. However, there is no documentation on how to use the data. It is assumed that the user knows the data prior to acquiring it. The data manager will assist users by way of answering any questions that they may have, but the data manager is in no position to tell the user how to use the data.

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18) Are the business processes and management practices assessed to meet changing technology?

Answer: Assessment process is fully implemented for taking advantage of changing technology, process is reviewed on a recurring basis.

Justification Comment: **Attachment(s):**   0

The dataset will evolve with the changes in technology. The data manager is tasked with maintaining the dataset and its holdings in the face of changes instrumentation, formats, and other technologies. This is accomplished through periodic review of archive holdings for data accessibility and usability. The data manager also stays on top of changing technologies from the instrument manufacturers and develops procedures for reading, analyzing, and archiving the data. This is an ongoing process as a part of the standard data stewardship process.

STAGE 7 - Archive

19) Is there an archiving process for the dataset?

Answer: Archival and disposition processes are fully implemented.

Justification Comment: **Attachment(s):**   0

Yes. All data received by the data manager at the National Centers for Environmental Information

(NCEI) are archived in accordance with National Archives and Records Administration (NARA)(https://www.archives.gov/records-mgmt/) standards and procedures and NOAA's guide for data managers (https://nosc.noaa.gov/EDMC/documents/NOAA_Procedure_document_final_12-16-1.pdf).